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The ICT Proficiencies of University Teachers in Saudi Arabia: A Case Study to Identify Challenges and Encouragements

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Abstract

Nowadays the use of information communications technology (ICT) is prevalent in higher education across all countries. This study focuses on the level of use of ICT among teachers at a leading university in Saudi Arabia. 16 in-depth interviews reveal that the majority of teachers do not make use of ICT in their teaching. A number of attitudes were identified ranging from the idea that ICT would hinder the teaching process to an unwillingness to change long-standing teaching methods. However, the results also reveal that many teachers want to use more ICT in their teaching. Thus, there is preparedness to receive training programmes that focus on ICT. The results are encouraging as well as identifying specific challenges.

Introduction

The pervasive nature of information and communication technology (ICT) and access to developing technologies and innovations, has seen the rapid integration of technologies into the workplace. One of the fields most influenced by technology is education. As the World Wide Web emerged, it became a prevailing universal mode of information acquisition providing high levels of accessibility to users and an innovative process for learning (Khan, 2001). The advancements in technology, especially access to the Internet, have paved the way for teachers to consider the use of such technological advancements in their pedagogy. This study will prove that today, there is an increasing number of educational establishments which are implementing ICT in their education policies and procedures, especially in the higher education establishments (Khan, 2001; Altowiry, 2005). The integration of ICT among higher education institutions is now on the rise, however there are issues regarding the use of ICT as a means of teaching; such issues arise among teachers themselves. The primary aim of this research is to investigate the level of ICT usage by university level teachers in Saudi Arabia and identify the challenges posed by the further introduction of ICT. Although it is proved that such technologies provide students with new and various types of learning and knowledge (Garson, 2000; Katz, 1999; Usluel et al., 2008), the issue is the competence of teachers in using such technologies, their motivation and the rationale for their use of ICT as an educational tool within the classroom.

The case study university arose from Royal Decree and focuses on science and technology. It has 800 faculty members and over 30,000 students enrolled (Saudi University Statistics, 2009). The institution's primary goal is to provide excellent academic performance among its graduates and likewise contributes research in the field of science and technology. The university implements the use of ICT in its education policies and procedures (Computer and Information Centre, 2006). This study is important because at this time considerable effort is being placed in the process of providing continual professional development (CPD) for teaching staff of universities in Saudi Arabia as well as in other parts of the world. The results reflect the tensions, challenges and affordability of CPD in ICT in professionally mature institutions across the world and have immediate impact for policymakers and other stakeholders in the education sector.

Literature Review

The integration of ICT is seen to prevail in educational institutions worldwide. It has always been the end goal of educational institutions, especially higher education institutions, to provide their students with knowledge necessary for them as they enter their corresponding workplaces (Garson, 2000). The integration of technology into education is one of the agencies through which students are provided with quality education. Garson (2000) suggests that this is because of how effectively information technologies engage students in interactive learning as well as promoting individualised learning among college students. Having the necessary skills, as well as knowledge, of ICT not only facilitates the provision of quality education, it also facilitates the improvement of the academic performance of students (Leidner and Jarvenpaa, 1995). It is considered that the integration of ICT into education provides both

students and teachers support towards their academic and professional advancement (Lawless and Pellegrino, 2007). In higher education, implementation of information technology is seen to be a dominant assistive device in teaching inside the classroom (Usluel et al., 2008; Katz, 1999).

ICT can be used both in class and for research purposes in the education sector. In class, the use of ICT can be using the internet to gain access to wider academic resources and the use of e-learning technology among other ways. For research purposes, ICT could be used for data analysis, which would be faster and more accurate. It could also be used to conduct simulation in order to come up with better strategies to counter future challenges in education. Use of ICT both in class and in research will improve the efficiency and effectiveness of the education system (Osborne and Hennessey, 2003).

The Ministry of Education in Saudi Arabia has placed much importance on the development of higher education in the country (Higher Education, 2006). The primary goal of the Government of Saudi Arabia is to advance the number of educational institutions throughout the country and furthermore upgrade existing colleges and universities in order to ensure quality education among higher education institutions (Higher Education, 2006). As a developing country, Saudi Arabia has established 22 government universities across the country (Saudi University Statistics, 2009). One of the ways of upholding quality education among universities in Saudi Arabia is by the government providing universities access to electronic information (access is available to 114,000 journal papers and book titles (Saudi University Statistics, 2009).

In addition to issues such as accessibility and lack of knowledge about ICT, there are also issues that arise from aspects of the culture of Saudi society. Albirini (2006) proposed that most developing countries share this issue relating to the integration of ICT into education. A study dealt with this particular issue and revealed that most teachers in Saudi Arabia avoid making use of the Internet because of issues related to their culture (Albirini, 2006). Teachers considered material found on the Internet unfit for the culture of the Saudi people, which is why teachers in Saudi Arabia are somehow averse to promoting the use of the Internet in education (Albirini, 2006). It is here that evidence to support the unwillingness of Saudi teachers to integrate ICT into education is rooted, not only in aspects such as accessibility, but also in aspects that concern one of the most important factors among Saudi Arabian people, that of culture (Albirini, 2006). In Saudi Arabia, the primary focus of education is centred on meeting first the religious needs of the country followed by economical and societal needs (Education, 2006). It is through education that the Saudi government hopes to eliminate ignorance among Saudi youth (Education, 2006).

The emergence of ICT, in the field of education, paved the way for various educational institutions to implement ICT into their education system. A study by Al-Kahtani et al (2006) conducted in Saudi Arabia identified the perceptions of female faculty members towards the implementation and the usage of ICT as a means of instruction inside the classroom. This research revealed a variation among the perceptions of these individuals in the use of the Internet inside the classroom, for example factors such as age and field of specialisation were related to the perceptions of the use of the Internet as a means of teaching.

In Saudi Arabia, there are various identified barriers to implementing ICT in higher educational institutions nationwide (Alwani and Soomro, 2004). These barriers are seen to be factors such as resources, guiding principles and support for teachers (Alwani and Soomro, 2004). A study conducted by Bingimlas (2009) further identified these barriers as the dominant factors that hinder the implementation of ICT among universities in Saudi Arabia. The study found that teachers identified further factors that hinder them from implementing such technology inside the classroom. The first dominant factor was identified as having low self-confidence when it comes to the use of ICT. It is here that we can see how using ICT is hindered because of teacher competence issues, that is why this study provides recommendations on providing educators with training in order to provide teachers with enough skills and later on to develop competence and confidence in making use of such technologies inside the classroom (Bingimlas, 2009; Akiba, et al, 2007).

There are existing ICT programmes that aim to provide students with educational encounters through technology, moreover providing students with the essential skills necessary for the use of ICT as they proceed towards employment (European Computer Driving Licence/ International Computer Driving Licence Foundation, 2008). This programme has been implemented in various countries worldwide. In the Middle East, countries are seeing the importance of gaining such skills in ICT which is why both public and private higher education institutions have implemented programmes into their educational system (European Computer Driving Licence / International Computer Driving Licence Foundation, 2008). A study conducted by Jones and Jones (2005) investigated the effectiveness of a programme called 'CourseInfo' among midwestern (USA) universities. It aimed to provide information as to whether teachers, as well as students, made use of programmes and the benefits arising from their use (Jones and Jones, 2005). Results reveal that both student respondents as well as teacher respondents saw the 'CourseInfo' programme beneficial to their learning as well as ensuring that quality education is provided to students in the universities (Jones and Jones, 2005). The use of ICT is also seen to be beneficial to teachers of English (Al-Asmari, 2005) giving the reasons of accessible information and teaching resources.

Several studies have been conducted in order to be informed of the possible effects of the implementation of ICT in education. A study by Zaman (1993) focused on how the usage of ICT affects learning as well as how it affects teaching.

Other countries, such as Malaysia, have been experimenting with the implementation of ICT into their education systems with the primary goal to provide students with quality education using ICT (Zaman, 1993). The shortcoming of this research was that it was not specific to a particular country.

Another study was conducted on perceptions of students and teachers on the usage of ICT in education. The aim of the research was to show the relatedness of perceptions students have on the usage of ICT in education and the benefits they receive from its usage (Almaghlouth, 2008). The research found that provision of software and hardware is not enough to remove the barriers for the use of ICT in education. There were other psychological barriers that needed to be eliminated (Almaghlouth, 2008). The research recommended further research in challenges facing the use of ICT in higher learning institutions in Saudi Arabia.

A further study was on successful integration of ICT in education carried out by Bingimlas (2009). The main objective of the research was to discover the barriers to integration of ICT in education in order to assist stakeholders in the education sector to develop successful technology adoption in schools in the future. According to the research, the major barriers were lack of confidence in ICT, lack of resources and lack of competence among others (Bingimlas, 2009).

The latter research are considered among the few that addressed the topic of current situation of the ICT usage in Saudi higher education. Therefore, this study focus lies not only on the effects of ICT on students' learning but also in the effect of ICT on the teaching process within the Saudi context.

Programmes or training should be provided to teachers in order for them to be kept up-to-date with both information and the skills necessary for the ongoing innovations in technology (Robertson, 2003; Qari, 1999). Not only students in colleges but also graduate students have encountered issues with regard to the lack of information as well as access to such information technology (Al-Saleh, 2004). This indicates that training in ICT should go beyond even college level (Dexter and Riedel, 2003). A cross-cultural study was conducted in order to focus on the effectiveness of the use of ICT primarily as a pedagogical tool inside the classroom (Mahrous and Ahmed, 2010). Results revealed a variance in the acceptance of ICT by students.

The potential impact of ICT on the efficacy of teaching and learning in Saudi universities is both ensured and limited by the attitudes and beliefs of teachers, the responsiveness of students and the availability of appropriate technology.

Methodology

This case study uses a qualitative approach to identify the level and effectiveness of ICT as perceived by university teachers. Their opinions and reflections are gathered through interviews that are facilitated in an open-ended way to encourage candid responses. A convenience sampling approach was adopted where the university teachers were self-selected. The researcher contacted the senior administrator of each of the 8 schools of the University requesting that they identify 2 volunteers to participate in the research. The invitation was presented as an 'opportunity' to be interviewed regarding 'the use of ICT to support teaching and learning' although the research had the status of administration approval. All schools had 2 volunteers and no further action was needed to obtain the 16 respondents. The issue of sample bias is considered in the final discussion. The privacy and confidentiality conditions of the ethical protocol (University of Southampton, 2010) were made clear. The respondents were entitled to make a voluntary and informed decision to take part in the study and they were assured that they were free to withdraw at any point during the study. None of the 16 withdrew either before, during or after their interview. It was the intention of the interviewer that the interviews were conducted in an atmosphere of open and honest discussion of the issues.

In the study, one important assumption was made. The assumption was that the perceptions of usage in ICT in education were the same for both male and female students. This assumption was made because of the government efforts to promote equality of gender and to make the study simple. It is however worth noting that the perceptions are different because Saudi Arabia is a relatively masculine nation. It was also assumed that there were no differences in the usage of ICT in science schools and humanities schools.

Due to the teachers' busy programmes, the interviews were conducted by arranging a meeting at the convenience of the respondent. The researcher interviewed the respondents on agreed dates, using a one-to-one interview format that offered an opportunity for clarification

The researcher asked one significant question from which further discussions emerged as the interviews proceeded: "Tell me about your usage of information and communication technology in your teaching". Additionally, the researcher had an opportunity to evaluate the body language and other non-verbal gestures giving a better understanding of the views of the respondents. The respondents were alerted that the interviews would be recorded to augment the researcher's notes.

After the oral interview, the researcher embarked on the transcription process and subsequently listened again to obtain a more full and complete understanding. The data was then recorded in report form. The researcher reviewed the feedback from the respondents and prepared for analysis by manual coding and scrutiny of the collected data. The results are linked to the aims of the research and to identify relationships between teachers' confidence and competence in, and motivation and rationale for, their use of ICT as an educational tool within the classroom.

Reflection

The respondents varied in their reasons as to why they did not use ICT tools in teaching. The reasons ranged from their inability to apply technology to their attitude towards ICT. A number identified the economic issue as regards to assistive gadgets. Although there was a difference in the reasons, one consistent aspect was that the teachers did not integrate the use of ICT in their teaching processes. One dominant result revealed that the majority of the teachers do not make use of any ICT technology as a teaching tool within their classes. Interview responses from different participants support this dominant finding.

Interviewee number 3 said that:

"I don't use ICT and its applications in my classroom as I don't know how to prepare a lesson by this technology".

Moreover, interviewee number 7's response also supported the first finding of this particular research; interviewee number 7 stated that,

"I admit that we don't make use of ICT in our lecturers as a method of teaching".

It is in these responses that we can see how participants directly indicate how they do not make use of such technology within the classroom or as their mode of teaching. On the other hand, interviewee number 11 stated that:

"Using ICT in teaching is not the best way to deliver my curriculum. The traditional way of teaching is the most effective way because of the direct communication between the teacher and the learners"

In addition, interviewee number 12 said that:

"ICT in teaching is a new method for me. I have delivered my course for 21 years using traditional ways of teaching and I am happy with my method of teaching".

Moreover, interviewee number 14 stated:

"To be honest with you, I don't use the modern technology in teaching my curriculum not because I am not convinced of its benefits but because I am not good at using it. Thus, I believe that the class time will be wasted in my attempts to use this technology"

In addition, interviewee number 15 quoted that:

"Researches have proved the efficacy of information and communication technology in the learning process but I don't use it often because it is easier for me to prepare my lessons by the traditional way while, I need more time and effort to prepare the lesson by technology".

These responses provide information that the university teachers do not make use of ICT as their mode of teaching because they have become familiar and comfortable with the traditional way of teaching, thus they do not make use of such technology within the classroom. On the other hand, results also reveal that a number of participants voiced their request for training programmes specifically for university teachers about ICT and its use in teaching. Responses from the participants reveal or support this particular finding. Interviewee number 3 stated that:

"I need someone to help or a training course to teach me how I can use ICT effectively in my teaching"

A similar response was gathered from interviewee number 15 who said that:

"Training in ICT is required to make the university teachers able to use ICT in their teaching"

In addition, interviewee number 2 said that:

"How the university asks me to use the modern technology while it does not provide me sufficient training to accomplish this."

Interviewee number 9 stated that:

"It is not logical to ask me to use something that you didn't train me to use it in the first place, logically you should train me first then ask me to do it".

These responses reveal that a number of participants in this specific study had similar reactions with regard to providing training amongst university teachers because of how little knowledge and skills they have regarding such matters. These results reveal that even though the majority of the teachers who participated in this study did not make use of ICT in their teaching, they are still interested in learning and undergoing training for ICT because of how most of them intimated that such training should be provided to university teachers.

Conclusion

In analysing the data collected by interview from the 16 university teachers it revealed two important findings relevant to this research. First, the majority of the 16 university teachers do not make use of ICT in their teaching. This finding reveals that even though there has been a prevalence of the use of ICT among educational institutions in general, in this Saudi university case study, teachers still do not make use of such technologies in their teaching and

that ICT usage is relatively low. The main reason why usage of ICT is low in the university is the lack of management commitment to promote ICT usage. The second finding reveals that most of the university teachers suggested creating, as well as undergoing, training programmes that focus on ICT in teaching. In relating both of these findings, it can be concluded that the teachers do not make use of ICT as tools in teaching as they lack the needed knowledge and skills necessary to make use of such technologies. However, it was also apparent that a number of teachers showed unwillingness to change their current traditional practice. The study thus concludes that barriers to the usage of ICT in education is a strategic issue since there is lack of a master plan on how to integrate ICT in education.

The management challenges associated with the introduction of ICT into university teaching are:

- Changing the culture of pedagogy to one that naturally integrates ICT to enhance current practice and enable new practice.
- Changing the attitudes or beliefs of a minority of teachers who either resist the introduction of ICT or apportion difficulties on others including the learners.

The encouragements are:

- The willingness of many staff to consider the use of ICT and to participate in continuing professional development in this area;
- The administration's desire to promote and resource the use of ICT.

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